

# TYPES 2N4058 THRU 2N4062, A5T4058 THRU A5T4062, A8T4058 THRU A8T4062 P-N-P SILICON TRANSISTORS

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## SILECT† TRANSISTORS‡

- Ideal for Low-Level Amplifier Applications
- Rugged One-Piece Construction with In-Line Leads or Standard TO-18 100-mil Pin-Circle Configuration
- Recommended for Complementary Use with 2N3707 thru 2N3711, A5T3707 thru A5T3711, or A8T3707 thru A8T3711

### mechanical data

These transistors are encapsulated in a plastic compound specifically designed for this purpose, using a highly mechanized process developed by Texas Instruments. The case will withstand soldering temperatures without deformation. These devices exhibit stable characteristics under high-humidity conditions and are capable of meeting MIL-STD-202C, Method 106B. The transistors are insensitive to light.

**2N4058 THRU 2N4062, A8T4058 THRU A8T4062**  
\*ALL JEDEC TO-92 DIMENSIONS AND NOTES ARE APPLICABLE

NOTES: A. Lead diameter is not controlled in this area.  
B. All dimensions are in inches.

DEVICE	LEAD		
	1	2	3
2N4058 thru 2N4062	Emitter	Collector	Base
A8T4058 thru A8T4062	Emitter	Base	Collector

**2N4058 thru 2N4062**

ECB

**A8T4058 thru A8T4062**

EBC

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**A5T4058 THRU A5T4062**

NOTES: A. Lead diameter is not controlled in this area.  
B. Leads having maximum diameter (0.019) shall be within 0.007 of their true positions measured in the gaging plane 0.054 below the seating plane of the device relative to a maximum-diameter package.  
C. All dimensions are in inches.

### absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

Collector-Base Voltage	-30 V*
Collector-Emitter Voltage (See Note 1)	-30 V*
Emitter-Base Voltage	-6 V*
Continuous Collector Current	-30 mA*
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	<div style="display: inline-block; vertical-align: middle;"> <math>\left\{ \begin{array}{l} 625 \text{ mW} \S \\ 360 \text{ mW}^* \end{array} \right.</math> </div>
Storage Temperature Range	-65°C to 150°C*
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C*

NOTES: 1. This value applies when the base-emitter diode is open-circuited.  
2. Derate the 625-mW rating linearly to 150°C free-air temperature at the rate of 5 mW/°C. Derate the 360-mW (JEDEC registered) rating linearly to 150°C free-air temperature at the rate of 2.88 mW/°C.

\*The asterisk identifies JEDEC registered data for the 2N4058 through 2N4062 only. This data sheet contains all applicable registered data in effect at the time of publication.

†Trademark of Texas Instruments

‡U.S. Patent No. 3,439,238

§Texas Instruments guarantees this value in addition to the JEDEC registered value which is also shown.

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USES CHIP P18

# TYPES 2N4058 THRU 2N4062, A5T4058 THRU A5T4062, A8T4058 THRU A8T4062 P-N-P SILICON TRANSISTORS

\*electrical characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	2N4058 A5T4058 A8T4058		2N4059 A5T4059 A8T4059		2N4060 A5T4060 A8T4060		2N4061 A5T4061 A8T4061		2N4062 A5T4062 A8T4062		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
		$V_{(BR)CEO}$ Collector-Emitter Breakdown Voltage	$I_C = -1 \text{ mA}$ , $I_B = 0$ , See Note 3	-30		-30		-30		-30		
$I_{CBO}$ Collector Cutoff Current	$V_{CB} = -20 \text{ V}$ , $I_E = 0$	-100		-100		-100		-100		-100		nA
$I_{EBO}$ Emitter Cutoff Current	$V_{EB} = -6 \text{ V}$ , $I_C = 0$	-100		-100		-100		-100		-100		nA
$h_{FE}$ Static Forward Current Transfer Ratio	$V_{CE} = -5 \text{ V}$ , $I_C = -100 \mu\text{A}$	100	400									
	$V_{CE} = -5 \text{ V}$ , $I_C = -1 \text{ mA}$			45	660	45	165	90	330	180	660	
$V_{BE}$ Base-Emitter Voltage	$V_{CE} = -5 \text{ V}$ , $I_C = -1 \text{ mA}$	-0.5	-1	-0.5	-1	-0.5	-1	-0.5	-1	-0.5	-1	V
$V_{CE(sat)}$ Collector-Emitter Saturation Voltage	$I_B = -0.5 \text{ mA}$ , $I_C = -10 \text{ mA}$	-0.7		-0.7		-0.7		-0.7		-0.7		V
$h_{fe}$ Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = -5 \text{ V}$ , $I_C = -100 \mu\text{A}$ , $f = 1 \text{ kHz}$	100	550									
	$V_{CE} = -5 \text{ V}$ , $I_C = -1 \text{ mA}$ , $f = 1 \text{ kHz}$			45	800	45	250	90	450	180	800	

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\*operating characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	2N4058, A5T4058, A8T4058			UNIT
		MIN	TYP	MAX	
		$\bar{F}$ Average Noise Figure	$V_{CE} = -5 \text{ V}$ , $I_C = -100 \mu\text{A}$ , Noise Bandwidth = 15.7 kHz,		

NOTES: 3. This parameter must be measured using pulse techniques:  $t_w = 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .

4. Average Noise Figure is measured in an amplifier with response down 3 dB at 10 Hz and 10 kHz and a high-frequency rolloff of 6 dB/octave.

\*The asterisk identifies JEDEC registered data for 2N4058 through 2N4062 only.

## THERMAL INFORMATION

### DISSIPATION DERATING CURVE

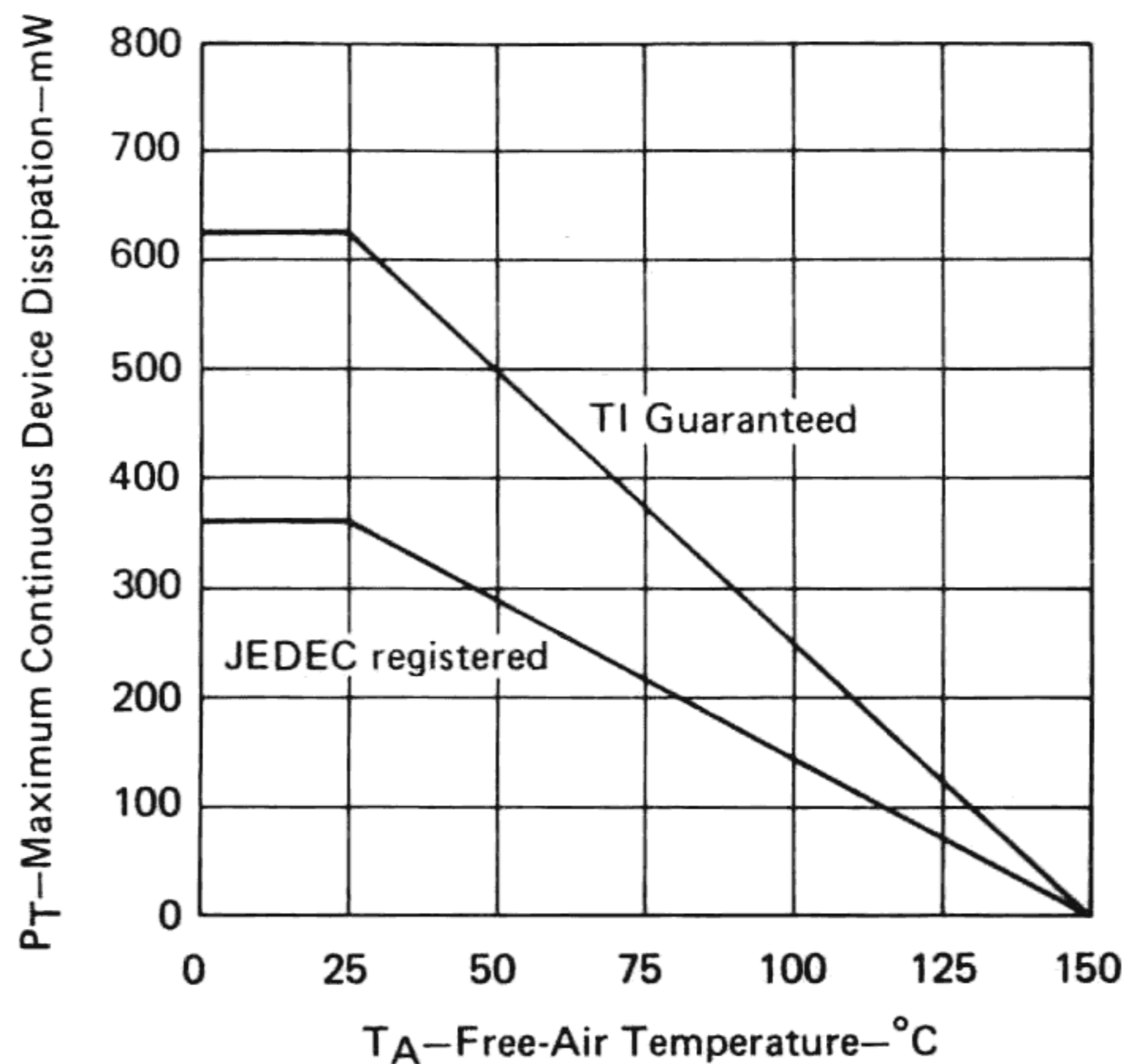


FIGURE 1